



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,723	05/25/2004	Hendra Sudin	22171-00016-US1	3722

30678 7590 10/05/2004

CONNOLLY BOVE LODGE & HUTZ LLP  
SUITE 800  
1990 M STREET NW  
WASHINGTON, DC 20036-3425

EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/709,723

Applicant(s)

HENDRA SUDIN

Examiner

Emily Y Chan

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 5 and 11 are rejected under 35 U.S.C. 102 (b) as being anticipated by Chee ('420).

Regarding to claim 1, Chee ('420) discloses a probe assembly for testing (see Figs 1 and 3) as claimed, comprising an insulative body (ceramic substrate 18 and elastic member 20); at least one supporter (32,34,36) positioned in the insulative body (18) (see Col. 3, lines 58-65); a probe (30) positioned substantially at center of the supporter (32,34,36); and a conductive wire (at least one conductive 22 and 24) positioned in the insulative body (18,20) and electrically connected to the supporter (32,34,36) (see Fig. 2).

Regarding to claim 3, Chee ('420) discloses that his supporter (32, 34, 36) comprises a plurality of beams (32, 24) positioned in a radial manner with the probe substantially at the center, and angles between two adjacent beams (32, 34) are substantially the same (see Fig. 2).

Regarding to claim 5, Chee ('420) discloses that his insulative body (18, 20) comprises an opening and the supporter (32, 34) is positioned in the opening (see Figs. 1 and 2).

Regarding to claim 11, Chee ('420) discloses that the material of his probe (30) and support (32, 34) is tungsten (see Col. 3, lines 57-63).

Therefore, Chee ('420) anticipates the claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chee ('420) in view of Harding ('993).

Regarding to claim 2, Chee ('420) does not disclose that his support (32, 34,36) is a helical spring.

Regarding to claim 4, Chee ('420) does not disclose at least one ring connected the beams (32,34).

Regarding to claim 6, Chee ('420) discloses that his support (32, 34) comprises three beams angles between two adjacent beams are substantially 120 degrees; however, Chee ('420) does not disclose at least one ring for connecting the beams (32, 34).

Harding ('993) discloses a touch probe (see Fig. 1) comprising at least one support (14,16 and a biasing mechanism) (see abstract) and exclusively teaches that

Art Unit: 2829

their biasing mechanism includes helical springs (40, 42). Harding ('993) also discloses at least one ring (cylindrical housing 12) connecting three beams (three equi-spaced roller 16) (see Col. 3, lines 1-2).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate Harding ('993)'s helical spring and ring for connecting the probe support into Chee ('420)'s probe assembly for the expected benefit of ensuring the support member returning to its rest position after the measuring operation as disclosed by Harding ('993) (see Col. 1, lines 36-39).

Regarding to claim 7, Chee ('420) does not disclose a quadranglar opening and a helical spring.

Regarding to claims 8, Chee ('420) also does not disclose quadrangular opening and four beams.

Regarding to claim 9, Chee ('420) does not disclose hexagonal opening and a helical spring.

Regarding to claims 10, Chee ('420) also does not disclose hexagonal and six beams.

However, a probe comprising helical spring support was taught by Harding ('993) (see paragraph 2 above). The probe support structure having four or six beams would have been obvious variations of Chee ('420)'s three beams (32,34).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to replace the three beams of Chee ('420) by its functional equivalent, four or six beams as claimed since duplicate or re-shape was held not

Art Unit: 2829

patentable distinct (see MPEP 2144.04) and the use of more beams in Chee ('420) in view of Harding ('993) would not perform differently than the use of Chee ('420)'s three beams.

3. Claims 12, 14, 16, 18-25, 27, 29, and 31- 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al ('392) in view of Chee ('420).

Regarding to claims 12 and 25, Cheng et al ('392) expressly disclose a modularized probe card (see Fig. 1) as claimed, comprising: a circuit board (60) having at least one test-connecting site; a probe head (20) having a plurality of probe devices (23), and an interface board (10) having at least one first signal-connecting site positioned on the upper surface of the interface board (10) for electrically connecting the test-connecting site of the circuit board (60) and at least one second signal-connecting site positioned on the bottom surface of the interface board (10) for electrically connecting the conductive wire of the probe head (20).

Cheng et al ('392) do not disclose that their probe device (23) comprises an insulative body, at least one support and a conductive wire.

Chee ('420) discloses a probe assembly for testing (see Figs 1 and 3) as claimed, comprising an insulative body (ceramic substrate 18 and elastic member 20); at least one supporter (32,34,36) positioned in the insulative body (18) (see Col. 3, lines 58-65); a probe (30) positioned substantially at center of the supporter (32,34,36); and a conductive wire (at least one conductive 22 and 24) positioned in the insulative body (18,20) and electrically connected to the supporter (32,34,36) (see Fig. 2).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate the probe assembly as taught by Chee ('420) into Cheng et al ('392) 's probe card device for the expected benefit to compensate for variations in the position of test pads or contacts due to the changes of probing pressure as disclosed by Chee ('420) (see Col. 3, lines 15-17 and Abstract, last three lines).

Regarding to claims 14, 16, 18 –21, 24, 27, 29, 31-34 and 37, they are rejected over Chee ('420) for the same reason as for the identical claims 3, 5 and 7-11 above.

Regarding to claims 22-23 and 35-36, Cheng et al ('392) disclose a plurality of pads (contact pads 22).

4. Claims 13, 15,17, 26, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al ('392) in view of Chee ('420) and further in view of Harding ('993).

Cheng et al ('392) in view of Chee ('420) do not disclose a helical spring and at least one ring.

Harding ('993) disclose a touch probe (see Fig. 1) comprising at least one support (14,16 and a biasing mechanism)(see abstract) and exclusively teach that their biasing mechanism includes helical spring (40, 42). Harding ('993) also discloses at least one ring (cylindrical housing 12) connecting three beams (three equi-spaced roller 16) (see Col. 3, lines 1-2).

It would have been obvious to one of ordinary skilled in the art at the time the claimed invention was made to incorporate Harding ('993)'s helical spring and ring for

Art Unit: 2829

connecting the probe support into Chee ('420)'s probe assembly with Cheng et al ('392) for the expected benefit of ensuring the support member returning to its rest position after the measuring operation as disclosed by Harding ('993) (see Col. 1, lines 36-39).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Di Stefano('685) discloses a compliant probe apparatus comprising an insulative body, at least one support, a probe, and a conductive wire.

McMurtry et al ('005) disclose a touch probe comprising a support, a probe and helical spring.

Yoda et al ('944) disclose a touch signal probe comprising an insulative body, at least one support, a probe and helical spring.

Stoehr ('571) discloses a contact probe assembly comprising a support and a probe.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

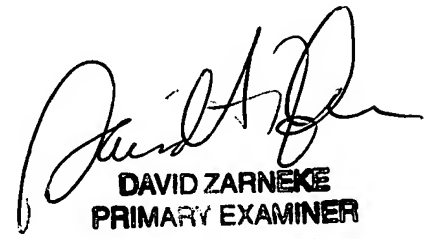
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ec  
9-27-04

  
**DAVID ZARNEKE**  
**PRIMARY EXAMINER**  
9/29/04